CRICK SMITH

TRINITY COLLEGE CHAPEL OXFORD

ARCHITECTURAL PAINT RESEARCH

THE CEILING

CONTACT: KATY ROSS

CLIENT: CLIVEDEN CONSERVATION WORKSHOPS

NOVEMBER 2010

Conservation, restoration and research of historic buildings and artifacts

Senior Researchers Fellows, University of Lincoln:
Neilian (Ian) C. Crick-Smith. BA (Hons) ACR
Michael G. Crick-Smith. BA (Hons)

Senior Conservator Researcher: Dr Rachel E M Faulding
Conservator Researcher: Paul Croft BA (Hons)
Technology Transfer Manager: Michael Poole MSc

University of Lincoln
Chad Varah House
Wordsworth Street
Lincoln
LN1 3BP

T: 01522 895051
F: 01522 895119

E: info@cricksmith.co.uk
www.cricksmith.co.uk

SECTION A – RESEARCH METHODOLOGY & BACKGROUND INFORMATION

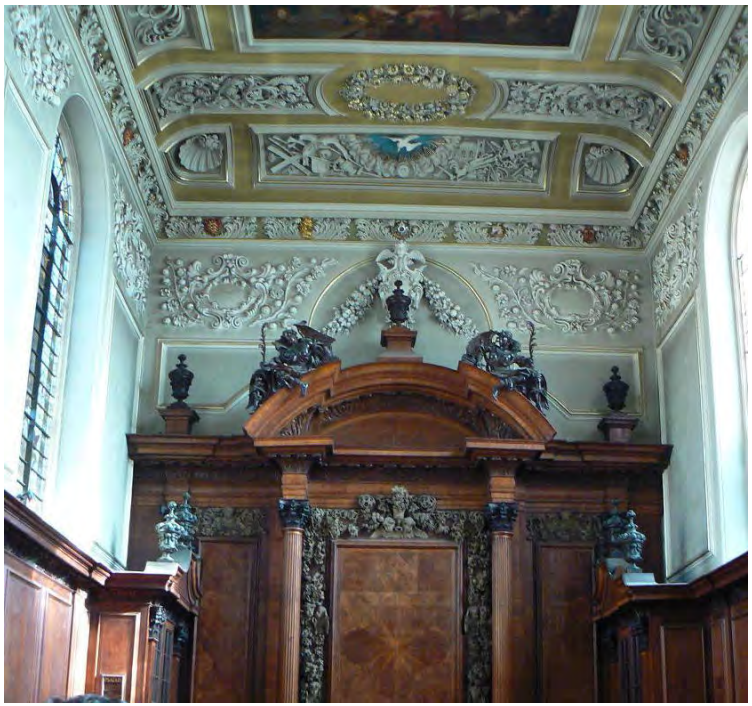
1.0 Introduction

Figure 1). View of the Chapel interior

showing the ornate ceiling over the organ balcony, liturgical West

Figure 2). View of Chapel Interior

Showing the ceiling at the liturgical East



This brief report details in chart format the results of the paint research of a series of paint samples removed from the ceiling of Trinity College Chapel, Oxford. The samples were forwarded to the researchers by Cliveden Conservation who were undertaking on site survey and conservation works. All site descriptions were provided by Cliveden Conservation and are recorded as provided. It was noted that sample nos 16-20 were recorded incorrectly and have been re-assigned. It was not part of this research brief for Crick Smith University of Lincoln to visit the site.

The client has not provided any detailed site photographs or site images

See Figure 8 on page 6 of this document for the results of this research.

2.0 Examination of Cross-sections

The paint fragments removed from the elements of each area were examined at 40x magnification under a binocular microscope and representative cross-sections mounted in polyester resin for further cross-sectional analysis. The mounted samples were viewed at a range of magnifications from 40 to 500x under both simulated daylight and ultraviolet light in order that the stratigraphy and chronology of the decorative schemes could be understood and cross-referenced. Some basic media analysis of the paint layers was also undertaken using fluorescence techniques under UV illumination and chemical spot testing. Photomicrographs (photographs taken through the microscope) of key cross-sections were taken for inclusion within this report to support and clarify the information detailed. These graphically show, in cross-section, small samples of paint removed from various areas/elements. They illustrate the build-up of paint layers (successive decorations), through the buildings history. These are included within this report and are annotated with strata diagrams and explanatory text. The annotations describe the original decorative scheme and the relevance of the later layers.

The colour descriptions detailed within this report are described using basic generic terminology; in addition, the colours seen in the photomicrographs should be viewed as representative only. The colours of the surviving paint layers may have altered since they were first applied due to various factors. Pigments may have faded when exposed to strong light or atmospheric pollution, causing a lightening or darkening of the colour. Darkening of the paint media may also have altered the appearance of the paint (Drying oils within paint darken in the absence of light).

Sample Location list/Cross-section References

Trinity College Chapel Ceiling Oxford (Tr.Col. Ch. Ceil/)

Samples taken by Trevor Proudfoot 25/08/10

Tr.Col. Ch. Ceil/1

1: Panel moulding – Centre south gild
2: Bolection moulding – South wall paint
3: Palm leaves - South wall shield
4: Panel moulding – South cove centre
5: Flatwork – between cove panel and centre panel
6: Centre panel – oak leaf
7: Centre panel – east flower (no sample provided)
8: Centre Panel east flower – South range cove
9: Centre panel – South range cove (no sample provided)
10: South cove flat in panel
11: Flat around the south centre wall panel
12: Wallshield surround – acanthus tendril

Tr.Col. Ch. Ceil/2

13: Centre of shield – south wall
14: Centre of shield - gilding
15: South wall centre cornice shield – acanthus curl

Samples taken by Guy Roberts
(Required re-numbering)

Tr.Col. Ch. Ceil/ 2 (continued)

16: East High Relief Garland – Gilding Sample
17: Blue Sky – under left wing of Dove
18: White Dove, breast - under left wing
19: Silver thunder bolt device
20: South East Corner Shell

3.0 Research Findings & Conclusions (incl representative photomicrographs)

Figure 3). Tr.Col. Ch. Ceil/ 1.1 Panel moulding – centre south gild

Description of layers:

Scheme 4 Extant scheme with gilding

Scheme 3 Pale cream lead oilpaint

Scheme 2 mid yellow cream lead Oilpaint (no gilding)

Scheme 1 mid warm cream lead oilpaint

Substrate not provided

Figure 4). Tr.Col. Ch. Ceil/ 1.4 panel moulding – south cove centre

Description of layers:

Scheme 4 Extant scheme with gilding

Scheme 3 Pale cream lead oilpaint with gilding

Scheme 2 mid yellow cream lead oilpaint with gilding

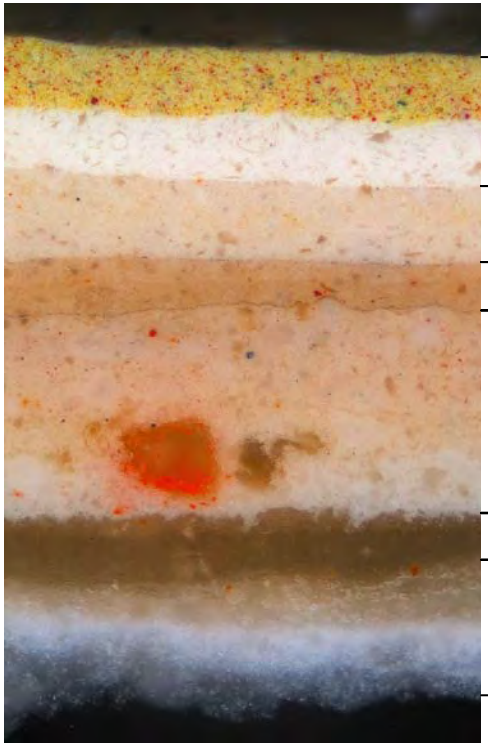
Scheme 1 mid warm cream lead oilpaint

Traces of stone coloured distemper

Plaster substrate

Traces of water based distemper paints were found. These would have been washed off prior to the application of the mid cream lead based oilpaint (scheme 1). There was no picking out or gilding at this stage

Figure 5). Tr.Col. Ch. Ceil/ 1.5 flatwork – between cove panel and centre panel



Description of layers:

Scheme 4 Extant scheme strong yellow cream alkyd oilpaint with an off-white undercoat

Scheme 3 Pale cream lead oilpaint

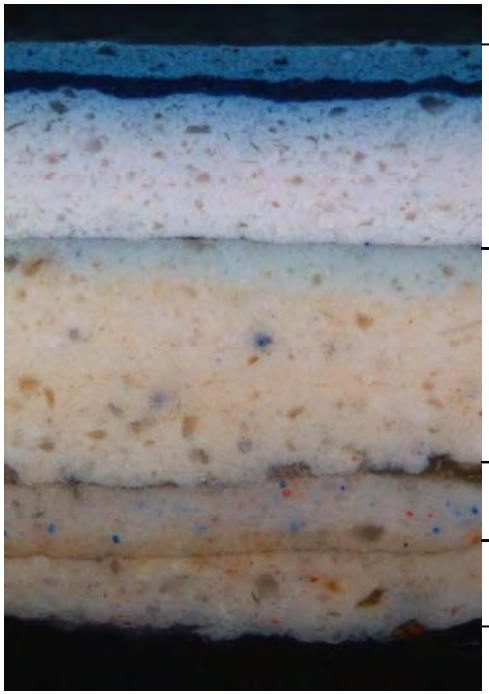
Scheme 2 mid yellow cream lead oilpaint

Scheme 1 mid warm cream lead oilpaint

Traces of stone coloured distemper

Plaster substrate

Figure 6). Tr.Col. Ch. Ceil/ 2.17 Blue sky under left wing of dove



Description of layers:

Scheme 4 Extant scheme
There appears to have been a modification to the scheme possibly during the time of application, when the mid blue replaces the dark blue picking out.

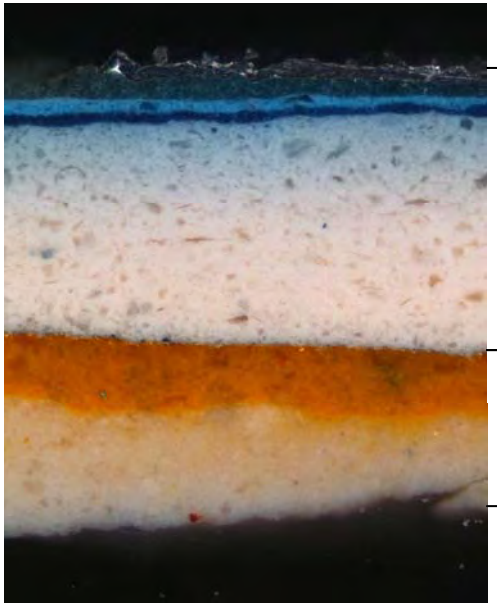
Scheme 3 Pale blue lead oilpaint

Scheme 2 Pale blue lead oilpaint

Scheme 1 mid warm cream lead oilpaint

Substrate not provided

Figure 7). Tr.Col. Ch. Ceil/ 2.19 Silver thunderbolt



Description of layers:

Scheme 4 Extant scheme with the addition of “silver” leaf picking out

Scheme 3 Pale cream lead oilpaint with gilding

Schemes 1 & 2 were not in evidence with the sample provided

FIGURE 8). CHART RECORDING THE EVIDENCE SURVIVING ON THE SAMPLES PROVIDED

Element Scheme details	1: TP Panel moulding – centre south gild	2: TP Bolection moulding – south wall paint	3: TP Palm Leaves – South wall shield	4: TP Panel moulding – south cove centre	5: TP Flatwork – between cove panel and centre panel	6: TP Centre panel – oak leaf	*7: TP* *No sample provided*	8: TP Centre panel east flower – South range cove	*9: TP* *No sample provided*	10: TP South cove flat in panel
4: post 1950 extant scheme	Pale cream alkyd oilpaint with gilding	Pale cream alkyd oilpaint	Pale cream alkyd oilpaint	Warm grey alkyd oilpaint with gilding	Strong yellow cream alkyd opt	Pale cream alkyd oilpaint		Pale cream alkyd oilpaint		Grey/cream alkyd oilpaint
3:	Pale cream lead oilpaint no gilding	Pale cream lead oilpaint no gilding	Pale cream lead oilpaint no gilding	Pale cream lead oilpaint with gilding	Pale cream lead oilpaint no gilding	Pale cream lead oilpaint no gilding		Pale cream lead oilpaint no gilding		
2:	Mid yellow/cream lead oilpaint no gilding	Mid yellow/cream lead oilpaint no gilding	Mid yellow/cream lead oilpaint no gilding	Mid yellow/cream lead oilpaint with gilding	Mid yellow/cream lead oilpaint	Mid yellow/cream lead oilpaint no gilding		Mid yellow/cream lead oilpaint no gilding		*Modern repair plaster*
1: Earliest evidence	Mid warm cream lead oilpaint no gilding	Mid warm cream lead oilpaint no gilding	Mid warm cream lead oilpaint no gilding	Mid warm cream lead oilpaint no gilding	Mid warm cream lead oilpaint no gilding	Mid warm cream lead oilpaint no gilding		Mid warm cream lead oilpaint no gilding		
		Traces of distemper	Traces of distemper	Traces of distempers	Traces of distempers	Traces of distemper		Traces of distemper		
Substrate	No substrate provided	Plaster	Plaster	Plaster	Plaster	Plaster		Plaster		

Element Scheme details	11: TP Flat around the south centre wall panel	12: TP Wallshield surround – acanthus tendril	13: TP Centre of shield - south wall	14: TP Centre of shield - gilding	15: TP South wall centre cornice shield – acanthus curl	16: GR East high relief garland – gilding sample	17: GR Blue sky – under left wing of dove	18: GR White dove, breast – under left wing	19: GR Silver thunder bolt device	20: GR South east corner shell
4: extant scheme	Pale cream alkyd oilpaint	Pale cream alkyd oilpaint	Pale cream alkyd oilpaint	Pale cream alkyd oilpaint with gilding	Pale cream alkyd oilpaint	Pale cream alkyd oilpaint with gilding	Mid blue alkyd oilpaint	Off-white alkyd oilpaint	Mid blue alkyd oilpaint with silver leaf	Pale cream alkyd oilpaint
							Dark blue alkyd oilpaint		Dark blue alkyd oilpaint	
3:	Pale cream lead oilpaint no gilding	Pale cream lead oilpaint no gilding	Pale cream lead oilpaint no gilding	Pale cream lead oilpaint no gilding	Pale cream lead oilpaint no gilding	Pale cream lead oilpaint no gilding	Pale cream lead oilpaint no gilding	Pale cream lead oilpaint no gilding	Pale cream lead oilpaint with gilding	Pale cream lead oilpaint no gilding
2:	Mid yellow/cream lead oilpaint no gilding	Mid yellow/cream lead oilpaint no gilding	Mid yellow/cream lead oilpaint no gilding	Mid yellow/cream lead oilpaint no gilding	Mid yellow/cream lead oilpaint no gilding	Mid yellow/cream lead oilpaint no gilding	Mid yellow/cream lead oilpaint no gilding	Mid yellow/cream lead oilpaint no gilding	*No earlier evidence provided*	Mid yellow/cream lead oilpaint no gilding
1: earliest evidence	Mid warm cream lead oilpaint no gilding	Mid warm cream lead oilpaint no gilding	Mid warm cream lead oilpaint no gilding	Mid warm cream lead oilpaint no gilding	Mid warm cream lead oilpaint no gilding	Mid warm cream lead oilpaint no gilding	Mid warm cream lead oilpaint no gilding	Mid warm cream lead oilpaint no gilding		Mid warm cream lead oilpaint no gilding
	Traces of distemper	Traces of distemper	Traces of distemper	Traces of distemper	Traces of distemper			Traces of distemper		
Substrate	Plaster	Plaster	No substrate provided	Plaster	Plaster	No substrate provided	No substrate provided	No substrate provided		No substrate provided

APPENDICES

Appendix I Material Analysis

MATERIAL ANALYSIS

The material analysis undertaken within this research was only at a minimum level. No positive pigment identification was undertaken. Where pigment names are given these are based upon visual identification only. If further clarification of these schemes is required, these pigments should be subjected to further material analysis.

The cross-sectional samples were viewed under both simulated daylight and ultraviolet illumination. This allowed the stratigraphy of the samples to be fully understood and provided an insight into the first appearance of schemes containing zinc compounds, which assisted with the dating of the layers.

Ultraviolet fluorescence was undertaken using an excitation filter of BP 340 – 380 nm wavelength. (Identification of metal driers and extenders within paint media)

Chemical spot testing was undertaken using Sodium sulphide ($Na_2S \cdot 9H_2O$) at 15% solution in distilled water. This chemical test identifies the presence of lead compounds within oilpaint films.

For details of the research facilities, conservation services and advice on the recreation of historic decorative schemes that Crick Smith Conservation, University of Lincoln are able to offer please contact Neilian (Ian) C. Crick at the University of Lincoln directly using the details on the front of this report.

REPORT INFORMATION

Report No.: Tr.Coll.Chpl.Oxf/Ph 1/completed

Site name: Trinity College Chapel Oxford
Project name: Ceiling

Services supplied: Architectural paint research

Research commenced: 20th October 2010
Completion date: 9th November 2010
Reporting commenced: 27th October 2010
Archive report completed: 9th November 2010

Author: Neilian C. Crick-Smith ACR
Crick Smith Conservation
The University of Lincoln
Chad Varah House
Wordsworth Street
Lincoln
LN1 3BP
Tel: 01522 895051
e-mails: n.crick@cricksmith.co.uk
m.smith@cricksmith.co.uk
web: www.cricksmith.co.uk

Client: Cliveden Conservation Workshop
Contact: Katy Ross, Conservator

The information contained within this report belongs to Crick Smith University of Lincoln and the person or organisation named as client within this report. However, the copyright of this report is the property of the University of Lincoln and cannot be communicated to a third party without permission from the author.

This research has been undertaken and presented to the client in good faith, using the highest standards of analytical research and technique available to the researchers at this time and pertinent to the requirements of this investigation. These techniques have been used to formulate findings and hypothesise in conjunction with the archival data presented to the researchers by the client and project team. If after the completion of this research further archive investigations are undertaken that result in more references becoming available or more detailed and extensive material analysis of the samples is undertaken, then the findings and conclusions within this document may require revision.

This report is issued subject to the following conditions:

- This report and the information therein remains the property of the University of Lincoln until payment in full is received from the client for this phase of the research program. Until payment is received, these documents should not be copied or the information distributed in any form. If payment is not received then these documents should be returned immediately to the author upon request.
- That the report or information therein is not used by the client or a third party in any legal proceeding without the express permissions of the author or researchers.
- That neither the University of Lincoln or researchers shall be liable in any way for any consequences, legal or otherwise, or for any loss or damage arising from any of the recommendations or options suggested within this report, or that may result from its submission, or for the actions of a client or third party using these findings to formulate conservation/restorations proposals and/or plans. Any suggestions and/or options outlined by the researchers within this report are for discussion purposes only based upon the hypothesis discussed within this report and should not be seen as the only options available. They are presented to the client and project team, to assist them in their own decision making processes.

Crick Smith Institute for the Research & Conservation of Historic Decoration, the University of Lincoln; Senior Research Fellows

Neilian C. Crick-Smith BA (Hons) ACR - Author and Senior Researcher
Michael G. Crick-Smith BA (Hons) – Senior Researcher